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BUREAU OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY
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November 16, 1994

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Shirley C. Virostek
Sierra Club
The Allegheny Group
1444 Washington Blvd.
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Dear Shirley:

CASE DEVELOPMENT SECTION
EPA Region III

Your concerns regarding the use of the Peachtree Flare on the hill above USS Irvin Works, as expressed in your letter of August 15, 1994, has been reviewed extensively. We trust that the following discussion adequately addresses your questions and concerns.

Coke oven gas (COG) produced at the Clairton Works and not utilized for heating the coke ovens is dispatched to other facilities within the Clairton plant and to facilities at the Irvin Works and the ET Works via the downriver pipelines. When originally installed, the COG distribution system also included the National Works in McKeesport, Duquesne Works, and Homestead Works. As far as can be determined, there is no comparable COG distribution system used elsewhere in the United States.

The consumption of coke oven gas to heat the coke batteries is fairly constant under normal operating conditions. That is because, in a sense, the coking operation is continuous and the need for fuel to heat the batteries is relatively uniform. Most of the other user facilities (except the blast furnaces), e.g. boilers, rolling mill reheat furnaces, annealing furnaces, and other miscellaneous users, are more like "batch" type operations. In batch type operations COG usage is dependent on energy demands at the specific facility. To Clairton Works and to USS Corp., COG is a commercial by-product of the coking process which is "sold" to the other facilities. These "sales" are not realized when the COG is flared; the volume burned is written off as a loss. Therefore, there is an internal impetus in USS not to flare the COG.

At the mixing station, located near the Irvin Works, natural gas is added to the COG as necessary to maintain a reasonably consistent BTU rating of the fuel and to maintain line pressure. Downstream distribution of the COG is also made at the mixing station. As stated above, this COG distribution system has been in place for many years and

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the reasons for locating the original flares at the Irvin location in the distribution system is not immediately available. Possibly, the flares were located at Irvin Works because of the adjacent mixing station.

The regulatory agencies, EPA, PADER, and ACHD, insist on a minimum acceptable environmental quality of the processed COG as described in the applicable regulations. USS Clairton Works is required to submit monthly reports showing the average weighted daily sulfur content (reported as equivalent grains of $H_2S/100dscf$). Over the past several years the average equivalent H_2S concentration (<20 grains/100dscf of COG) has been significantly below the maximum allowed (40 grains). The agencies cannot really dictate where and how USS can use the COG.

It should also be pointed that in DAQ's emission inventory development program, the consumer facility is used in quantifying the emissions from a source. Most, if not all of the COG that is burned off at the flares would have been consumed downstream from the Clairton Works. Therefore, it is not considered inappropriate to have the flares located on Irvin Works property instead of being sited at the Clairton Works.

For instance, if a rolling mill goes down for an extended period, due to mill maintenance or other reasons, the demand for fuel goes down. There is no gas storage vessel in the coke oven gas distribution system that could be used as a "surge tank" to temporarily store the excess coke oven gas made available by the reduced demand. To prevent dangerous pressure build-up in the COG distribution system, the excess gas must be disposed of, in this case to one or more of the flares, and it is burned off.

The newer Peachtree Flare is located on a hill above the other flares. The mixing station operators monitor meteorology reports regularly. If there is a need to flare COG and the meteorology shows the presence of an inversion, they are directed to flare at the Peachtree location. USS considers its use to be advantageous because the products of combustion hopefully will be "punched" through a low level inversion layer and get better immediate dispersal thereby minimizing any effects on local air quality.

As you are aware, DAQ and USS have finalized an agreement regarding the desulfurization plant at the Clairton Works. The agreement requires USS to maintain additional on-line backup equipment and make other improvements to minimize DS plant breakdowns and prevent air quality problems due to SO_2 . Therefore, the flaring of un-desulfurized coke oven gas should be minimized. I wish I could say that the use of, or flaring of, raw coke oven gas could be totally eliminated by these actions but I am sure, from years of experience in industry, that the

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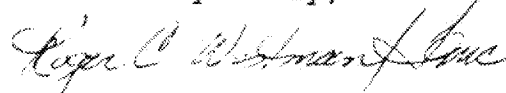
desulfurization process will "find some way to thwart our best efforts on occasion". Be assured that DAQ will monitor such process breakdowns to assure that the process is restored to service in a timely manner.

Two other projects are on-going which should have significant impact on the use of the Irvin flares, including the Peachtree Flare.

1. A practice is being developed for the use of COG as a supplementary fuel in the blast furnace. This application, once it is debugged and used on both blast furnaces, will consistently use most of the COG available in the distribution system. The thermochemistry of the blast furnace is such that it is expected that almost all of the sulfur in the COG, irrespective of the sulfur content, will be absorbed in the hot metal and slag. At this time, substantial quantities of COG are being used on one blast furnace and ET hopes to have COG used as a fuel on both blast furnaces within the next six months.
2. An installation permit is under review by DAQ for the modification of the Peachtree Flare to permit more complete combustion, which is intended to eliminate the smoke and much of the luminosity you have observed during operation of the flare.

In conclusion, we do not think there will be a time in the near future where the need for flares will be eliminated completely. However, many positive steps have been taken that will reduce the need to flare gas and to assure that any gas flared has been desulfurized.

Yours very truly,



Roger C. Westman
Manager, Division of Air Quality

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